J. Gass,

Coal Screen.

No. 18,687. Patented Nov. 24, 1857.

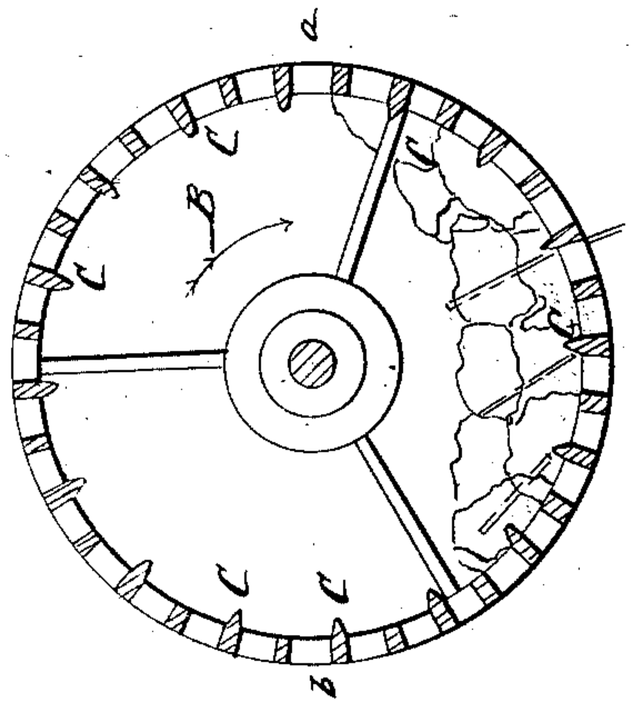

Fig. 3.

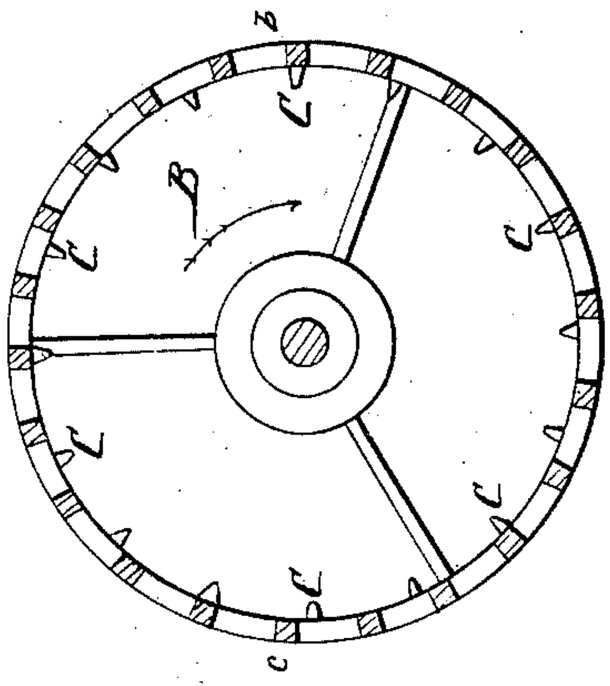

Fig. 2.

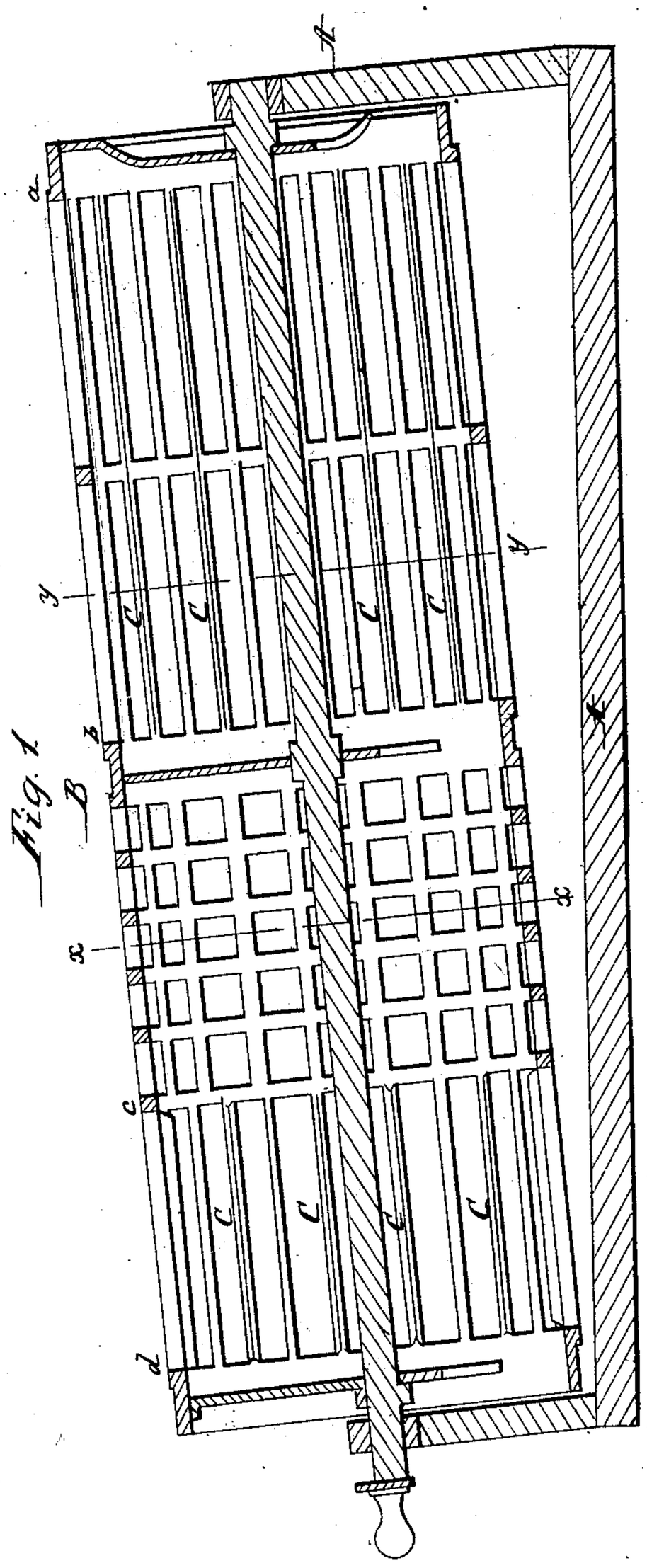

Fig. 1.

UNITED STATES PATENT OFFICE.

JACOB GASS, OF TREVORTON, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND GEO. MOWTON.

MACHINE FOR SLATING COAL.

Specification of Letters Patent No. 18,687, dated November 24, 1857.

To all whom it may concern:

Be it known that I, JACOB GASS, of Trevorton, in the county of Northumberland and State of Pennsylvania, have invented a new and useful Improvement in Machinery for Slating or Separating Coal; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a vertical, longitudinal section of a coal slater constructed after my invention. Fig. 2, is a transverse section through the line *x*, *x*, in Fig. 1. Fig. 3, is a transverse section in the line *y*, *y*, of Fig. 1.

Similar letters of reference in each of the several figures indicate corresponding parts.

The nature of my invention consists in the employment in the process of slating coal of an inclined revolving cylinder when said cylinder is constructed with the following several peculiar features for united use, to wit, checkered circumferentially near the center of its length with small square openings, furnished with narrow oblong slots from its receiving end to the checkering, and with similar, but wider, slots from the discharge end to the checkering, and each or every other one of its slats furnished with a beveled V-shaped rib, internally, which only extends from the checkering to the ends of the cylinder.

The first part of my invention, to wit, the intermediate checkered section, insures the discharge of a portion of the smaller coal entirely free from slate, before arriving at the lower extremity of the cylinder, and thus is effected a saving of a portion of the labor which has necessarily to be spent in "picking" the coal even after it has passed through my slater. And the second part of my invention, to wit, the inner lips or ribs render more certain the discharge of the slate between the slatted portions of the cylinder before the escape of the coal, it compelling the slate to assume a vertical position under the axis of the cylinder and then slide out between the slats.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, represents the frame in which the slating cylinder is hung.

B, is the slating cylinder, its axis is parallel with its sides, but is hung inclinedly in the frame, so as to give the cylinder an inclination from a horizontal plane, as shown in Fig. 1, and thus effect the automatic passage of the coal from the reception to the discharge end of the cylinder. The cylinder B, is slatted from *a*, to *b*, and is checkered from *b*, to *c*, and then again slatted from *c*, to *d*, Fig. 1.

C, C, are beveled ribs or lips on the inner side of the slats, extending from *a*, to *b*, and from *c*, to *d*. The slats of the section *a*, *b*, are placed closer together than those of the section *b*, *c*, or *c*, *d*, so that no coal shall escape with the slate until it arrives at the checkered section. The section *b*, *c*, is checkered with square openings which are made broader than the spaces between the slats *a*, *b*, so that the smaller coal which may have been slated in its passage through the section *a*, *b*, may escape before passing into the section *c*, *d*, and thus a considerable amount of the labor which is necessarily spent in picking the coal, even after being passed through the slater, is saved. The spaces between the slats of the section *c*, *d*, are made no broader in width than the checks or square openings of section *b*, *c*, so that the larger coal which cannot escape through section *b*, *c*, shall not be able to pass through them, but shall be compelled to pass to the end of the cylinder in order to make an exit and consequently be subjected to the slating process in their passage through section *c*, *d*.

As the coal passes through the slatted sections, the slate is kept from sliding round with the coal, by the ribs or lips, and consequently when it arrives under the axis of the cylinder, it stands in a vertical position and by its gravity falls through the spaces between the slats as illustrated in red in Fig. 3.

The operation is as follows: The coal being introduced at the elevated end of the cylinder, and the cylinder set in rapid motion, it ascends and passes through section *a*, *b*, to section *b*, *c*. At this point such portion of the coal as may have been deprived of its slate and is small enough to pass through the checks or square openings *b*, *c*, escapes without carrying any foreign substances with it. While the small coal is escaping through this section a new supply is being slated in section *a*, *b*, and ready to pass into *b*, *c;* at the same time that portion

of the coal which was too large to escape through *b*, *c*, is being subjected to the slating process in section *c*, *d;* from which it escapes through the lower end of the cylinder deprived of a greater portion of the foreign matter, and in a condition which will greatly reduce the labor and expense of "picking" by hand.

I am aware that a cylinder formed of bars placed farther apart at one end than at the other, so as to provide oblong slots of different widths, has been used for cleaning grain, also that a cylinder of this construction has been furnished with an intermediate perforated section, therefore I do not claim this, but

What I do claim as my invention and desire to secure by Letters Patent, is—

The employment in the process of slating coal, of the revolving inclined cylinder, when constructed with the several peculiar features for united use, to wit, checkered circumferentially near the center of its length with small square openings, furnished with narrow oblong slots from its receiving end to the checkering and with similar, but wider slots from the discharge end to the checkering and each, or every other one of its slats furnished with a beveled or V-shaped rib, internally, which only extends from the checkering to the ends of the cylinder, substantially as and for the purposes set forth.

The above specification of my improvement in slating coal signed and witnessed this twentieth day of August 1857.

JACOB GASS.

Witnesses:

G. YORKE AT LEE,

MUNN & Co.